4. (Twice Amended) In a device for forwarding data packets, the device having a memory containing storage locations, a method comprising:

receiving header data of a network layer packet;

B1 selecting a first one of the storage locations based on a first set of bits contained in the header data; and

executing an instruction at the first selected storage location;

selecting a second one of the storage locations based on the executed instruction and a second set of bits contained in the header data; and

selecting a third one of the storage locations based on contents of the second selected storage location and a third set of bits contained in the header data.

B2 5. (Amended) The method of claim 4 wherein the packet is an IP packet.

7. (Amended) The method of claim 10 wherein the step of employing the contents of the second entry comprises executing an instruction contained in the second entry to forward the IP packet toward the destination address.

B3 8. (Amended) The method of claim 10 wherein the first entry contains an instruction to use the second forwarding lookup.

10. (Twice Amended) In a device for forwarding an Internet Protocol (IP) packet toward a destination having a destination address containing a sequence of bits, a method

B4 comprising:

using a first set of bits from the destination address of the IP packet as an index to locate a first entry in a first forwarding lookup;

where the first entry in the first forwarding lookup provides direction to a second forwarding lookup, using a second set of bits from the destination address as an index to locate a second entry in a second forwarding lookup;

B4 employing contents of the second entry in forwarding the IP packet, wherein employing contents of the second entry comprises identifying that a third forwarding lookup should be used in forwarding the IP packet; and

employing a third set of bits from the destination address as an index to locate a third entry in the third forwarding lookup and employing the contents of the third entry in forwarding the IP packet.

B5 11. (Amended) The method of claim 10 wherein the device includes an application specific integrated circuit (ASIC) and wherein the ASIC performs the steps of the method.

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12. (Twice Amended) In a switch having a memory in a network that employs a connectionless network protocol, a method of forwarding data packets, each having an associated destination address comprising:

B6 providing a first forwarding lookup, a second forwarding lookup and a third forwarding lookup with locations in the memory, wherein the locations are indexed by a multiple bits; and

for at least a portion of the packets to be forwarded, employing a first set of bits in the destination address to locate and access at least one location in the first forwarding lookup, a

second set of bits in the destination address to locate and access at least one location in the second forwarding lookup and a third set of bits in the destination address to locate and access at least one location in the third forwarding lookup to forward the at least a portion of the data packets, wherein the number of bits in any of the first, second and third set of bits is less than the total number of bits in the destination address.

B6

15. (Twice Amended) A device for forwarding received network layer packets wherein the packets include header data, comprising:

a first lookup structure storing entries that provide instructions regarding forwarding of network layer packets, said entries being indexed by multiple bits;

a second lookup structure storing entries that provide instructions regarding forwarding of network layer packets, said entries being indexed by multiple bits;

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a third lookup structure storing entries that provide instructions regarding forwarding of network layer packets, said entries being indexed by multiple bits; and

a forwarding controller for using a first set of bits from the header data of each received packet as an index to locate an entry in the first lookup structure and for executing the instruction stored at the located entry in the first lookup structure,for using a second set of bits from the header data of each received packet as an index to locate an entry in the second lookup structure and for executing the instruction stored at the located entry in the second lookup structure and for using a third set of bits from the header data of each received packet as an index to locate an entry in the third lookup structure and for executing the instruction stored at the located entry in the third lookup structure.

24. (Twice Amended) In a device for forwarding data packets wherein the device includes a storage having storage locations, a computer-readable medium holding computer-executable instructions for performing a method, comprising:

using a first set of multiple bits from header data for a network layer packet as an index to locate a selected first one of the storage locations that, in combination with a second set of multiple bits from header data, provides a location of a second one of the storage locations, wherein the second one of the storage locations provides a location, in conjunction with a third set of multiple bits from the header data, of a third one of the storage locations, wherein the third one of the storage locations provides an instruction regarding how the device should forward the network layer packet; and

executing the instruction to forward the network layer packet toward the destination.

B 8

REMARKS

Applicants respectfully request that the application be reconsidered in view of the above amendments and the following remarks. Claims 1, 2, 6, 9, 14 and 19-20 have been canceled. Claims 4 and 10 have been rewritten in independent form and, thus, have not been narrowed by the present amendment. Claims 3 and 5 have been amended to depend from claim 4. Claims 7, 8 and 11 have been amended to depend from claim 10. Claims 12, 15 and 24 have been amended to improve form. The Office Action rejects 1-31 under 35 U.S.C. 102(e) as allegedly being anticipated by U.S. Patent No. 6,052,683 (hereinafter "IRWIN"). Reconsideration of the outstanding rejections is respectfully requested in view of the following remarks.